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AMENDMENTS TO THE CLAIMS

1. (Cancelled)

2. (Cancelled)

3. (Currently amended) The variable amplitude voltage regulator according to Claim 2 6 wherein the predetermined frequency of the output signal of the DSP is a fixed frequency above the audible range and the transistor is switched fully on and off in a ratio determined by the adjustable duty ratio (DR) of the output of the DSP.

4. (Original) The variable amplitude voltage regulator according to Claim 3 wherein the demand level control signal (DLS) is defined by the following equation:

$$DLS = [(R1) / (R1 + R2) \times (1 - DR) \times ACR]$$

where R1 is the resistance of the transistor and R2 is the resistance of the resistor connected in parallel with the collector emitter path of the transistor.

5. (Currently amended) The variable amplitude voltage regulator according to Claim 1 6 wherein the demand level control signal (DLS) is defined by the following equation:

$$DLS = [(R1) / (R1 + R2) \times (1 - DR) \times ACR]$$

where R1 is the resistance of the transistor and R2 is the

1 resistance of the resistor connected in parallel with the collector
2 emitter path of the transistor.

3
4 6. (new) A variable amplitude voltage regulator for use in a
5 power factor correction system including in combination:

6 a resistor scaling network consisting of at least one
7 variable resistor comprising at lease one bi-polar transistor
8 having a base, an emitter, and a collector, the collector emitter
9 path of which is connected in parallel with a fixed resistance;

10 a source of rectified alternating current input voltage
11 (ACR) coupled to the resistor scaling network;

12 a voltage error differential amplifier coupled to the ACR
13 and to a reference signal to produce a voltage error signal (VES);

14 a digital signal processing (DSP) circuit;

15 means coupling the VES to the DSP to produce an output
16 signal at a predetermined frequency with an adjustable duty ratio
17 (DR);

18 means coupling the ACR with the collector emitter path of
19 the transistor and the output signal from the DSP to the base of
20 the transistor to produce a demand level control signal which
21 varies as a function of the VES dc level.
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